Plant Photonics
Advanced Lighting Technology

User Manual

for
90 watt, 140 watt,
210 watt & 280 watt
LED Lights - Amethyst DS v1

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Thank you for purchasing your Plant Photonics light. It has been designed and built to provide you with a lifetime of service. Please read the following instructions to get the best from your light.

VERY IMPORTANT!

Your new Plant Photonics light can produce **2 spectrum's** which are designed for the **vegging and flowering** stages of your plants life cycle.

YOU MUST SWITCH THE LIGHT OFF BEFORE CHANGING THE SPECTRUM!

Failure to do so may lead to failure of the leds and will void your warranty!

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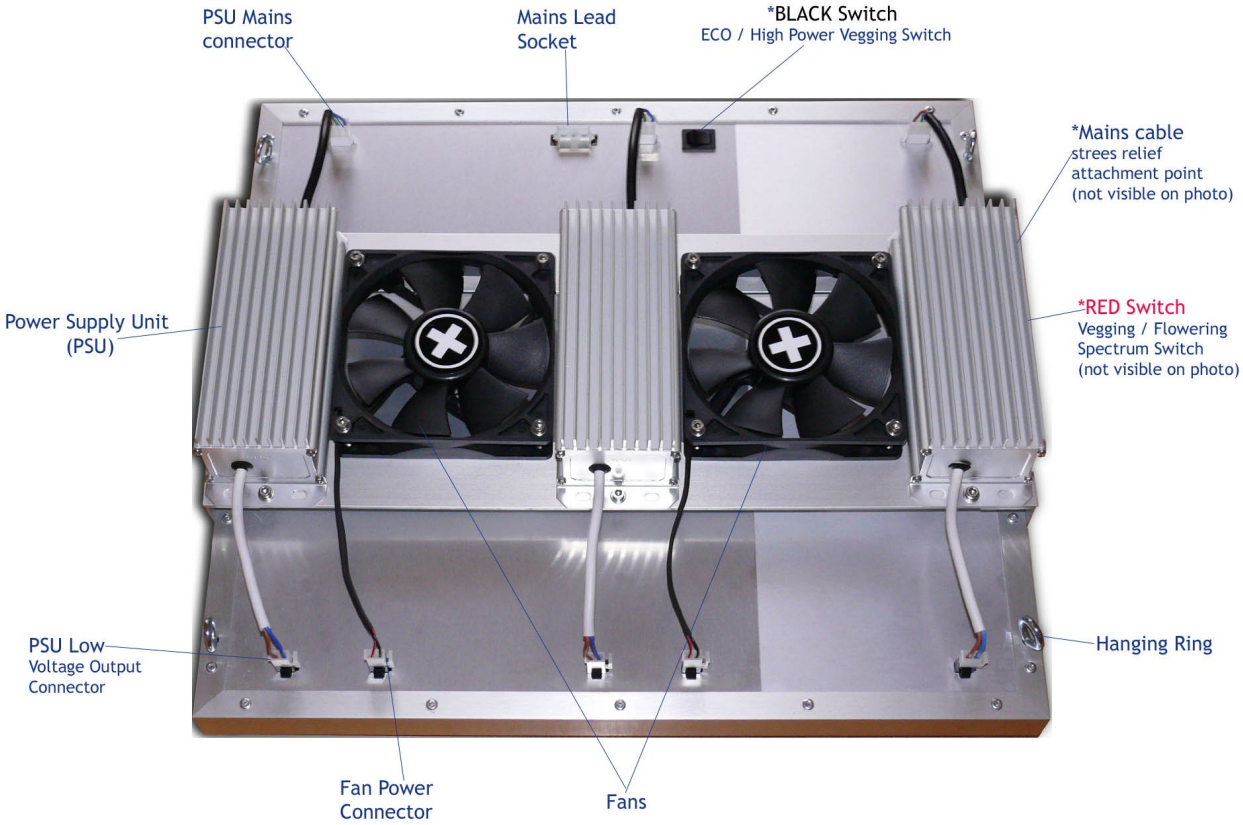
140 Watt Led Light component's diagram



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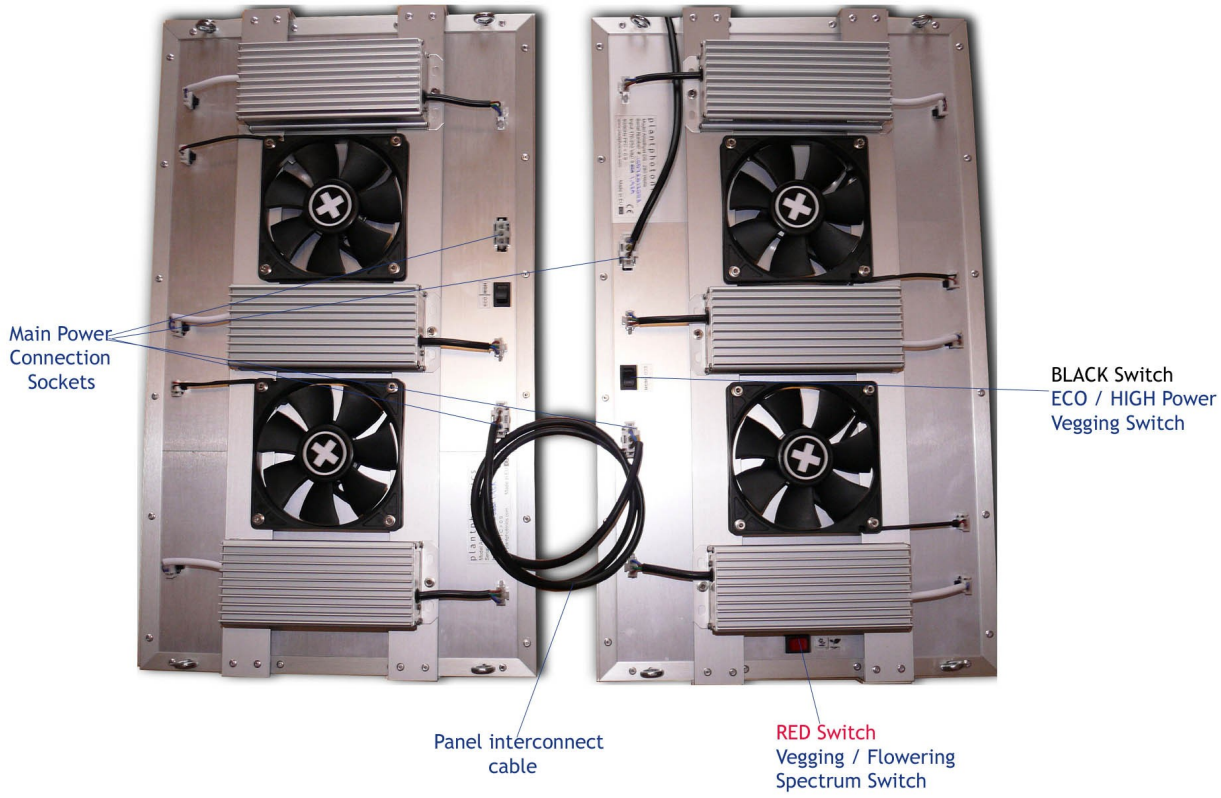
280 Watt Led Light component's diagram



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1. Light Maintenance

Your light should be kept clean for best performance and quieter operation. Never use harsh chemicals or solvents to clean your light. Use a soft dry or SLIGHTLY damp cloth or a small paint brush. Clean the top of the light after every grow cycle and insure the fan blades are clean. A layer of dust on the top of the light will cause it to operate at a higher temperature and dirt building up on the fans will cause them to become noisy and eventually fail. If kept clean they should last at least 10 years. Clean the lens with a dry micro fibre cloth. If you have splashed chemicals or nutrient solution on the lens, use a damp cloth to remove the splash, then gently dry the lens.

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2. Setting Up Your Light

- 90 Watt and 140 Watt Lights

In the box you have 1 led light panel and 1 mains lead with the correct mains plug for your region on one end and a small white connector on the other. Carefully plug the mains lead connector into the mains lead socket on the light until the 2 retaining clips snap into position. Please check it is the right way around and never use force, the connector should go in easily! You will notice that the mains lead has a D ring and a split ring attached to it. This is the stress relief which protects against the cord being pulled out of the socket *(please see photo A below)*. Decide which side of the light you want the mains lead to go and attach the split ring to the attachment point on that side of the light. The attachment point is a small hole drilled in the upright support for the power supplies at the back of the light. There is one on each side so you can route the mains lead to which ever side is most convenient.

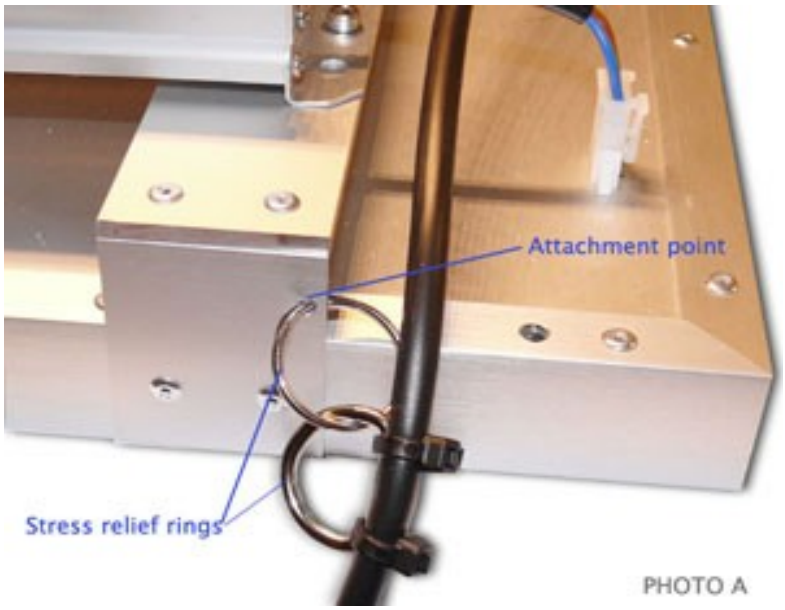

PHOTO A

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- 210 Watt and 280 Watt Lights

In the box you have 2 led light panels, 1 mains lead with the correct mains plug for your region on one end and a small white connector on the other, 1 panel inter connection cable with a small white connector on each end and 1 loose plastic connector with no metal pins.

Each panel has 2 sockets. ANY of these sockets can be used for the mains lead or the panel inter connect. Decide which of the 4 sockets is most convenient (closest to where yo want the mains lead to be. Carefully plug the mains lead connector into the mains lead socket on the light until the 2 retaining clips snap into position. Please check it is the right way around and never use force, the connector should go in easily!

You will notice that the mains lead has a D ring and a split ring attached to it. This is the stress relief which protects against the cord being pulled out of the socket. Attach the split ring to the attachment point on the side of the light closest to the socket you have the mains lead plugged into *(please see photo A below)*. The attachment point is a small hole drilled in the upright support for the power supplies at the back of the light. There is one on each side so you can route the mains lead to which ever side is most convenient.

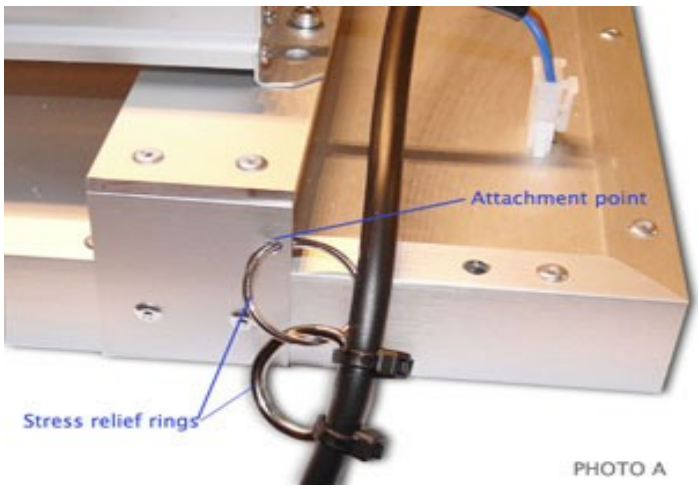

PHOTO A

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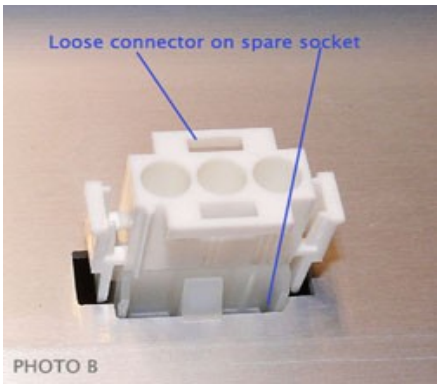
Then plug one end of the panel inter connection lead into the other socket on the panel and plug the other end into whichever socket on the other panel you want.

Finally, snap the loose connector into the remaining empty socket on the panel, this covers the pins to protect against any change of the user receiving an electric shock *(please see photo B below)*.



3. Using Your Light

- Hanging Your Light

Your light should be hung in the centre of the area you want it to cover. For mature plants, the light should be about 30 cm above the plants, BUT if you have been using another light and are replacing it with a Plant Photonics light part way through the grow cycle it is advisable to put the light 40 to 50 cm above the plant to begin with, then lower over the next few days. This is because our new light is extremely powerful and your plants may need some time to get used to the higher light levels.

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- Selecting the correct Spectrum and Power Level.

Your light has 3 different modes which are controlled by 2 switches.

1) Low Power or Eco Vegging Mode. This mode gives a normal vegging spectrum, but at a reduced brightness of about 2/3 normal. This is great for seedlings, cuttings and small plants which do not need the lights full power. To select this mode, use the **BLACK** switch near the mains lead. Select **ECO** for low power and **HIGH** for full power. NOTE – It makes no difference whether the RED spectrum switch is set to Vegging or Flowering, when the BLACK switch is set to ECO you will get ECO Vegging. When the BLACK switch is set to HIGH you will get whatever spectrum the RED switch is set to. See the table below.

2) High Power Vegging Mode. This mode gives you a Vegging spectrum at the full rated power of your light. To select this mode set the **BLACK** switch to HIGH and the **RED** switch to Vegging. **Note – If you need to change the setting of the RED switch, YOU MUST SWITCH THE LIGHT OFF FIRST!**

3) High Power Flowering Mode. This mode gives you a Flowering spectrum at the full rated power of your light. To select this mode set the **BLACK switch** to HIGH and the **RED** switch to Flowering. **Note – If you need to change the setting of the RED switch, YOU MUST SWITCH THE LIGHT OFF FIRST!**

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Spectrum	Red Switch	Black Switch
Low Power/Eco Vegging	Either setting.	ECO
Full Power Vegging	Vegging	HIGH
Full Power Flowering	Flowering	HIGH

- Timers and Extension cords

Your light can be used with any type of timer; mechanical or electronic.
I recommend not using more than 560 watts of led lights per timer. If you have more than this, I recommend using more than 1 timer and setting the timers so they come on at slightly different times. This is to avoid the possibility of the inrush current blowing a fuse or circuit breaker. Although the lights draw very little power when they are on, when they are first switched on they create what is called an 'inrush current'. This is a short period (about 1/100) of a second where the power supplies draw a large amount of power as they charge their capacitors and stabilise.

Having said that, I would always recommend buying a decent timer as it will be more reliable and last longer.

I recommend you do NOT use any extension cords or multi-plugs which have a power on light or lighted switch. These seem to allow a tiny trickle of power through (possibly via ground leakage) which is enough to make the leds glow slightly when the light is switched off! If you see this problem, simply change your extension cord for a plain one and the leds won't glow!

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4. Hint And Tips

- Keep your lights as close to the plants as possible while still covering the grow area.
- Change the spectrum from Vegging to Flowering a week before you cut the hours. This will cause faster flowering. A good time to do it is when you change the fertilizer to a flowering one.
- Change back to the vegging spectrum for the last 2 weeks of flowering. This will give you the highest quality results. It is the same as the way many growers go back to MH for the last 2 weeks, to increase resin production and improve taste.
- Use less nutrients/fertilizer than usual. Hydro growers will notice they will only need to top up about half as often as usual. Usually the plants will do better with a much lower EC than you needed with normal lights. This also means plants grown under leds require less flushing.

5. Trouble Shooting

Your light has been built using top quality materials and is designed to run for many years. In the unlikely event of a fault the following information will help you to overcome or diagnose most faults. Please be careful at all times and do not attempt anything you do no feel confident in doing.

- One of the fans has stopped.

If all of the leds are still working carefully unplug the fan, then plug it back in. If it doesn't work the fan needs to be replaced. Please contact us for a replacement fan.

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- Several rows of leds are not working.

Check that the BLACK switch near the mains lead is set to HIGH. With the light unplugged operate both the RED and BLACK switches a couple of times, ensure that the BLACK switch is set to HIGH.

- **If this has not fixed it then:**
    a) Unplug the light and carefully unplug and then replace all of the connectors (2 per power supply) from the power supplies to the light.

- **If this has not fixed it then:**

The following requires that the user has some basic electrical/DIY skills. If you don't, DO NOT attempt this, either ask a friend with the required skills or contact me.

Do ONE of the following:

a) Use a test meter set to DC volts and a minimum range of 100 Volts DC. You can also use one of the cheap electrical test pens with a small light instead of the meter. With the light unplugged, unplug the low voltage DC connectors (those are the WHITE cables) from the light. Plug the light in and check the voltage from each power supply. The voltage should read approximately 90V. The exact reading is not important as it will vary slightly between power supplies. **DO NOT PLUG THE CONNECTORS BACK IN WITH THE LIGHT TURNED ON!** If you find you have a faulty power supply, please contact us for a replacement.

b) Remove all 2/3 power supplies, but not the fans. Plug one back in (both connectors) and plug the light in. If some leds light, that power supply is ok. If no leds are lit, unplug the light and repeat, this time using a

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different power supply. If the leds light this time, then the first power supply was faulty. When you have identified a power supply that works, use it to test the remaining leds by plugging it into the remaining 1/2 power supply sockets on the light, remembering to unplug the light before changing the power supplies. If all the leds work, the problem is a faulty power supply. Test the remaining power supplies one at a time to locate the faulty unit. Contact me for a replacement power supply. If all the power supplies test out OK and a section of the leds are still not lighting you have a faulty led and the unit will have to be returned for repair.

- One led is not lit.

The led is faulty. If all the other leds are lit it means that the faulty led is still conducting electricity. The only way to repair a faulty led is to send it back to Plant Photonics for repair. However the light will continue to work perfectly with one faulty led and the reduction in power output will be tiny, you will never notice the difference. Operating the light with 1 faulty led will not harm the light in any way. It is up to you whether you want to have it repaired. If you are using the light for growing, I would suggest waiting until the grow is finished. If you are near the end of your warranty, just email me informing me of the fault and I will allow you to return it at a later date and still repair it under warranty!

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- The whole light is dead.

Don't Panic! This is VERY unlikely to be serious as it would mean that all 3 power supplies have failed at the same time. Unless you have been hit by lightning it means something like a loose wire in the plug or a faulty timer.
(UK customers only, please check the fuse in the mains plug).

Plug the light directly into the mains socket. If the light comes on then the fault is in any extension cords or timers etc. the light was plugged into. If it doesn't come on, unplug it from the mains and remove and replace the mains cable from the light. Plug it in and try it. If it still doesn't come on check the wiring in the plug for a loose wire. Check that the circuit breaker/fuse for that wall outlet is ok in your fuse/breaker panel. Try a different socket in another room. If all this fails, please contact me.

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